



west virginia department of environmental protection

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**GENERAL PERMIT REGISTRATION APPLICATION
ENGINEERING EVALUATION / FACT SHEET**

BACKGROUND INFORMATION

Registration No.:	G35-A030B
Plant ID No.:	097-00060
Applicant:	CONE Gathering LLC (CONE)
Facility Name:	Alton Compressor Station
Location:	Alton, Upshur County
SIC Code:	1311
NAICS Code:	211111
Application Type:	Class I Administrative Update
Received Date:	December 15, 2015
Engineer Assigned:	Jerry Williams, P.E.
Fee Amount:	NA
Date Received:	NA
Complete Date:	January 8, 2016
Due Date:	February 22, 2016
Applicant Ad Date:	NA
Newspaper:	NA
UTM's:	Easting: 570.89 km Northing: 4294.25 km Zone: 17
Lat/Long:	38.794150, -80.183697
Description:	Replacement of two (2) lean burn engines with one (1) ultra lean burn engine, removal of one (1) wellhead production unit, and updates to storage tank list.

TYPE OF PROCESS

The following process description was taken from Registration Application G35-A030B:

The Alton Compressor Station provides gathering and compression from several Marcellus Shale natural gas well pads in the area. The facility occupies less than two acres (2 ac. +/-) of developed land. A drawing of the Alton Compressor Station facility can be found on the Plot Plan in Attachment E. The purpose of this administrative update application is to replace the existing natural gas compressor engines (E02 & E03) listed in G35-A030A with one new, ultra-lean burn natural gas compressor engine (E04) with oxidation catalyst (CAT1). Also, one

permitted Wellhead Production Unit (P04) will be removed from the permit registration, and there are some updates to the storage tanks listed in the permit registration. As a result of these changes, potential hourly and annual emissions of regulated air pollutants will drop significantly at this facility.

The slop oil/pipeline fluids storage tanks (A12 & A13; 4,200 gallons each), lube oil storage tanks (A14 to A17; 500 gallons each), and the used oil storage tank (A18; 500 gallons) will have negligible emissions of regulated air pollutants due to the low vapor pressure of their contents and due to their low annual throughputs.

The new compressor engine (E04) is planned to be installed about 01/01/2016, and start-up of the new compressor engine is planned to occur soon thereafter. The two existing compressor engines (E02 & E03) will be permanently shut down prior to start-up of the new compressor engine.

SITE INSPECTION

A site inspection was conducted by John Money penny on January 13, 2015. The facility was operating in compliance at that time. The permittee met the siting requirements set forth in G35-A.

Directions as given in the permit application are as follows:

Site is located off of Hemlock Road (County Route 32/15), approximately 1.1 miles from the intersection of Queens Road (County Route 32) and Hemlock Road (County Route 32/15), near the community of Alton.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emissions associated with this application consist of the replacement of two (2) lean burn engines with one (1) ultra lean burn engine, removal of one (1) wellhead production unit, and updates to storage tank list.

The following table indicates which methodology was used in the emissions determination:

Emission Unit ID#	Process Equipment	Calculation Methodology
E04	1,380 hp Caterpillar G3516BLE Reciprocating Internal Combustion Engine (RICE) w/ NSCR	Manufacturer's Data, EPA AP-42 Emission Factors

The following table indicates the control device efficiencies that are required for this engine:

Emission Unit	Pollutant	Control Device	Control Efficiency
1,380 hp Caterpillar G3516BLE RICE w/ Oxidation Catalyst (C-100 – C-1100)	Carbon Monoxide	Oxidation Catalyst	93 %
	Volatile Organic Compounds		48 %
	Formaldehyde		89 %

The following table represents the emissions change associated with this Class I administrative update:

Pollutant	G35-A030A (Before) Emissions (tons/year)	G35-A030B (After) Emissions (tons/year)	Change in Emissions (tons/year)
Nitrogen Oxides	55.56	9.69	-45.87
Carbon Monoxide	50.58	4.23	-46.35
Volatile Organic Compounds	10.38	9.95	-0.43
Particulate Matter-10	1.13	0.70	-0.68
Sulfur Dioxide	0.11	0.06	-0.05
Formaldehyde	6.77	0.68	-6.09
Total HAPs	8.45	2.30	-6.15

Maximum detailed controlled point source emissions were calculated by CONE and checked for accuracy by the writer and are summarized in the table on the next page.

CONE Gathering LLC – Alton Compressor Station (G35-A030B)

Emission Point ID#	Source	NO _x		CO		VOC		PM-10/2.5		SO ₂		Total HAPs	
		lb/hr	ton/year	lb/hr	ton/year	lb/hr	ton/year	lb/hr	ton/year	lb/hr	ton/year	lb/hr	ton/year
E04	Compressor Engine	1.52	6.66	0.52	2.27	1.44	6.31	0.11	0.50	0.01	0.03	0.15	0.67
RBLR2	Dehy Reboiler	0.15	0.66	0.13	0.55	0.01	0.04	0.01	0.05	0.01	<0.01	<0.01	<0.01
DEHY2	Glycol Dehydration Unit	0.00	0.00	0.00	0.00	0.63	2.74	0.00	0.00	0.00	0.00	0.36	1.54
P01	Wellhead Production Unit	0.18	0.79	0.11	0.47	0.01	0.04	0.01	0.05	<0.01	0.01	<0.01	<0.01
P02	Wellhead Production Unit	0.18	0.79	0.11	0.47	0.01	0.04	0.01	0.05	<0.01	0.01	<0.01	<0.01
P03	Wellhead Production Unit	0.18	0.79	0.11	0.47	0.01	0.04	0.01	0.05	<0.01	0.01	<0.01	<0.01
A05	Pipeline Liquids Storage Tank	0.00	0.00	0.00	0.00	0.50	0.74	0.00	0.00	0.00	0.00	0.07	0.09
Total Point Source		2.21	9.69	0.98	4.23	2.61	9.95	0.15	0.70	0.02	0.06	0.58	2.30
FUG	Pipeline Fugitive Emissions	-	-	-	-	0.28	1.24	-	-	-	-	<0.01	<0.01
R1	Unpaved Haulroads	-	-	-	-	-	-	0.46	0.21	-	-	-	-
BD	Compressor Engine Blowdowns	-	-	-	-	4.89	0.03	-	-	-	-	0.12	<0.01
SV	Engine Starter Vents	-	-	-	-	2.20	0.08	-	-	-	-	0.06	<0.01
PIG	Pigging Operations	-	-	-	-	24.58	0.04	-	-	-	-	0.61	0.04
Total Fugitive		0.00	0.00	0.00	0.00	31.95	1.39	0.46	0.21	0.00	0.00	0.79	0.04
Total Site wide		2.21	9.69	0.98	4.23	34.56	11.34	0.61	0.91	0.02	0.06	1.37	2.34

GENERAL PERMIT ELIGIBILITY

The proposed modification and operation of this facility meets the eligibility, siting, limitations, and emissions controls as specified in General Permit G35-A.

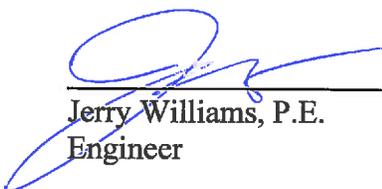
CONE's compressor engine is subject to 40CFR60 Subpart JJJJ, which sets forth emission limits, fuel requirements, installation requirements, and monitoring requirements based on the year of installation of the subject internal combustion engine. 40CFR60 Subpart JJJJ is applicable to owners and operators of new stationary spark ignition internal combustion engines manufactured after July 1, 2007, for engines with a maximum rated power capacity greater than 500 hp.

The proposed 1,380 hp engine (E04) will be subject to this rule. The emission limits for this engine are the following: NO_x – 1.0 g/hp-hr (3.04 lb/hr); CO – 2.0 g/hp-hr (6.08 lb/hr); and VOC – 0.7 g/hp-hr (2.13 lb/hr). Based on the manufacturer's specifications for these engines, the emission standards will be met.

Because this engine will not be certified by the manufacturer, CONE will be required to perform an initial performance test within 180 days from startup, and subsequent testing every 8,760 hours or 3 years, whichever comes first.

RECOMMENDATION TO DIRECTOR

CONE's request for a Class I administrative update for a natural gas compressor station at the Alton, Upshur County, WV site meets the requirements of General Permit G35-A and all applicable rules and regulations and therefore should be granted a General Permit Registration to modify and operate the said facility.



Jerry Williams, P.E.
Engineer

JAN 8, 2016

Date